INTERACTIONS BETWEEN A MID-DAY MEAL PROGRAM AND STUDENTS' EDUCATION

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ABSTRACT

The mid-day meal programme is one of the important strategies, and its main goal is to reduce education expenditures while also improving children's nutritional levels. Malnutrition and dietary deficiencies are common among schoolchildren, and they have a negative impact on their growth and development. Objective: To assess the influence of midday meals on the nutritional status of schoolchildren (6-12 years). Methodology: A cross-sectional study of 58 youngsters who eat midday meals on a daily basis was conducted. The anthropometric examination was carried out in line with ICMR Standard Values, which included height, weight, and the circumference of the mid upper arm (MUAC). Routine calorie intake and food consumption patterns were examined over the course of three days. The study found that while schoolchildren's average height and weight were much lower than ICMR norms, their mid-circumference values were comparable to those of standards regardless of their mid-day meals. The dietary extraction process revealed that micronutrient intake was insignificantly lower than the recommended levels.

KEYWORDS: Mid-Day Meal Programme, Malnutrition, Anthropometric Measurements, Dietary Intake & Nutritional Status.

Mid Day Meal Programme:

According to the Indian Constitution, all children have the right to elementary education. It hasn't always been 100 percent successful, but it has steadily improved. As a result, the government suggested a reform to enrol as many pupils as possible in free education between the ages of 6 and 12. The Midday Meal Scheme is a multi-purpose initiative run by the Indian government to address food safety, nutritional deficit, and educational access. On the 15th of August in 1995, the Ministry for Human Resources Development of the Government of India launched the scheme in India. The Department of Elementary Education and Literacy is responsible for all aspects of elementary education and literacy. This programme was expanded in 2002 to include children who were enrolled in the Education and Informal Education Program (EGS). It was first introduced in 2002. In September 2002, the mid-day meal programme offered 300 calories and 8-12 grammes of protein to all government and government-assisted students in grades I through V. With all of these positive results, the Scheme was expanded to the upper primary classes (VI to VII) in October 2007. This provides free lunch to all junior and intermediate groups on workdays. This programme is India's largest school lunch programme, with the purpose of providing nutritional support to children in both rural and urban areas.

The elementary school years are a critical time in a child's physical and intellectual development. Children contribute to the basic human potential and are a driving force for the country's economy and progress. Their nutritional and health state is monitored for the purposes of improving learning, growth, and physical development, and the nutritional need is one of the most important factors of health, labour productivity, and mental development at that time. The weight and height of a child's anthropometric scales are particularly indicative of their physical development. The infant's height and weight, on the other hand, are a reliable indicator of its nutritional status.

Malnutrition:

Poverty in children is multifaceted, including biological, behavioural, and environmental factors. This imposes a huge cost not only because it increases mortality, but also because it increases morbidity and impairs cognitive skills, which cuts national health and development expenses dramatically. This lowers infection tolerance and increases the population's illness burden. One of rural India's largest challenges is inadequate nutrition, which is caused by poor food habits, a weakened immune system, and substantial developmental delays. The country is still dealing with this issue. Malnutrition, poor food intake, illnesses, psychosocial poverty, insanitary conditions, social inequality, insufficient hygiene, and certain genetic contributions are all factors that can contribute to malnutrition, poor food intake, illnesses, psychosocial poverty, insanitary conditions, social inequality, insufficient hygiene, and certain genetic contributions.

Prevalence:

Children who are malnourished are either too young or too small for their age. Indian performance on major malnutrition indicators was dismal, according to national and international assessments. According to UNICEF, India has the tenth-highest number of underweight children in the world, and the 17th-highest number of stunted children. Malnutrition is responsible for 54 percent of global child mortality, while childhood underweight is responsible for 35 percent of global deaths, according to the WHO. In underdeveloped countries, 52 percent are stunted, and 34 percent to 62 percent are underweight.

METHODOLOGY:

Selection of Subjects:

Random sampling method has been used by the researcher. Total 58 students has been targeted in this study.

Study Area:

The study was carried out in Government higher primary school, Ahmedabad

Collection of Data:

Demographic Data:

After respondents were chosen, demographic information was acquired using a standardised Questionnaire.

Age, gender, family history, occupation and education of the parents, family size, SES, and dietary preferences were all elicited using a pre-tested questionnaire.

Anthropometric Evaluation:

Anthropometric measurements include height, weight, and the circumference of the mid-upper arm. Following that, the mean values are compared to ICMR criteria.

Dimensions and Weight:

The subjects' heights were measured using a height measuring scale. The individual's weight was then determined using a weighing machine. The height and weight that were recorded were compared to the standard values.

Standard height and weight for boys and girls are represented in the tabular form:

Table 1: ICMR Standard Height and Weight for Boys

Age (years)	Boys		Girls	
	Weight (kg)	Height (cm)	Weight (kg)	Height (cm)
6	20	116	19	114
7	23	121	21	120
8	25	127	24	126
9	28	132	28	132
10	31	137	32	138
11	32	140	33	142
12	37	147	38	148

Mid-Upper Arm Circumference:

Mid-upper arm circumference of the individual was measured using a measuring tape and compared with standard mid-upper arm circumference value according to age.

Table 2: Standard Mid Upper Arm Circumference

MUAC Range	Malnutrition Status
<11.0cm	Severe malnutrition
11.0cm to 12.5cm	Moderate malnutrition
12.5cm to 13.5cm	Acute malnutrition
>13.5cm	Well nourished

It was necessary to comprehend the inclusion of food stuff contributing nutrients in the mid-day meal during the collection of diet history in order to examine the important nutrients required for optimal growth and development.

Table 3: Quantity of the Food Items Used in the Midday Meal

Item	Primary	Upper Primary
Rice	100gms	150gms
Pulses	20gms	30gms
Vegetables	50gms	75gms
Oil	5gms	7.5gms
Salt	2gms	2.5gms
Micronutrients	Adequate other micronutrients like Iron, Folic acid, Vitamin A etc.	

Food frequency, likes and dislikes of foods, amount of water drank in a day, taste of midday meal, quality and quantity of midday meal, variety, and overall approval of midday meal were all covered in the oral questionnaire. Once all of the data was collected, it was statistically evaluated using percentages, means, and standard deviations, as well as analyses and t-tests.

RESULTS AND DISCUSSIONS:

Table 4 shows the average height of the chosen subjects. In terms of standard heights, the study population's mean height was found to be very low. This is due to the fact that it is the growing season, and thus the required intake may not be able to satisfy the demand. However, as they approached early adolescence (beyond the age of ten), there was a noticeable increase in height to the typical value.

Table 4: Mean Height of Selected Subjects

	Boys				Girls			
Age in Years	No. of Children	Height (cm)	Mean Height & S. D±	p Value	No. of Children	Height (cm)	Mean Height & S. D±	p Value
6	2	116	113 ±1.41	0.024	5	114	112.6 ±2.19	0.374
7	3	121	114 ±2.64	0.423	4	120	112.25 ±0.95	NS
8	5	127	116.6 ±3.36	0.587	2	126	117 ±5.65	0.205
9	3	132	121 ±4.35	0.289	4	132	119.25 ±4.19	0.133
10	9	137	126 ±6.13	0.026	1	138	112 0	NS
11	2	140	136 ±6.36	NS	2	142	129.5 ±0.707	0.126
12	5	147	141.8 ±8.78	0.426	11	148	136.2 ±6.21	0.007

NS-Non significant; 0.00 Highly significant

The mean weight of the selected patients is shown in table 5. The mean weight was found to be comfortably modest in comparison to the standard once more. According to statistical analysis, my observation approach has a link with statistical analyses suggesting males have reached their development potential in early adolescence compared to their low counterparts.

Table 5: Mean Weight of Selected Subjects

	Boys				Girls			
Age in years	No. of children	Weight (kg)	Mean weight S. D±	p value	No. of children	Weight (kg)	Mean weight S. D±	p value
6	2	20	17 ±1.41	0.5	5	19	16.8 ±3.193	0.089
7	3	23	17.33 ±3.21	0.118	4	21	16.75 ±1.258	0.0215
8	5	25	20.6 ±3.28	0.099	2	24	17.5 ±2.12	0.5
9	3	28	23.7 ±4.16	0.691	4	28	23.25 ±2.98	0.342
10	9	31	25.2 ±2.77	0.753	1	32	24 0	NS
11	2	32	29 ±1.413	0.05	2	33	25 ±1.41	0.565
12	5	37	31.2 ±6.14	0.028	11	38	31.3 ±4.73	0.05

NS-non significant; 0.0 significant

Nutritional status of the selected subjects is presented in the table 6. 92% Almost half of the study population are well nourished.

Table 6: Percentage of MUAC of the Selected Subjects

Mid Upper Arm Circumference (MUAC)	Number of Children (%)
< 11.0cm	1 (2%)
11.0cm-12.5cm	1 (2%)
12.5cm-13.5cm)	2 (4%)
>13.5cm)	53 (92%)

The perusal of table 7 gives the details pf calorie and Protein gained from midday meal programme for the study population. It is been well distributed as per the

growth stage of the subjects.

Table 7: Contribution of Calorie and Protein from Midday Meal

Food Stuffs	Lower Primary		Higher Primary	
	Calorie(kcal)	Protein(g)	Calorie(kcal)	Protein(g)
Rice	345	6.8	517.5	10
Dhal	65	5	81.25	7.5
DF Salt	27	0	54	0
Oil	54	0	54	0
Vegetables	54	2	75.6	3
Total	491	13.8	728.35	20.5

CONCLUSIONS:

Mid-day meals are the largest school dinner programme in India, serving almost 139 million children. It also boasts the country's largest children's development programme (ICDS), which provides free food to schoolchildren as part of a nutritional programme. The MDMS Scheme was implemented to increase primary school registration, attendance, and nutritional status at the same time. The midday meal programme has proven to be effective in identifying and resolving nutritional needs for children from low-income families, despite the fact that the number of children from low-income families is dropping.

The Midday Meal Program (MDM) is seen as a strategy to boost enrolment, attendance, and retention in the region, as well as promote nutrition in elementary education. MDM got around one-third of the daily nutrient intake for each school child in the form of a hot prepared meal. Many children from low-income families felt better since the school lunch might replace rather than augment their home meals. It was vital to emphasise that the short-term impacts on increased concentration, memory, and learning ability were as important as the long-term effects on nutritional status of the school meal. A hungry boy is a bad pupil who loses focus. A noon meal was a key strategy for fighting hunger in the classroom and fostering greater learning. The majority of students arrive to school hungry in the morning. Eating together with kids from many castes and cultures was also a way to enhance social integration.

The goal of the study was to have an impact on the dietary habits and attendance of children who ate lunch at school. An anthropometric evaluation has been completed. Data was collected using standardised questionnaires that included demographic information about individual pupils as well as a three-day dietary recall. The main components, such as registration, attendance, and information on consistency, flavour, and midday food quantity, were employed in the data gathering. Additional statistics were used to conduct a comprehensive analysis and determine the degree of relationship between the variables identified in the report.

The study found that children's nutritional condition was low due to the economics as well as other demographic characteristics such as fathers' jobs, parents' education, and genetic heritage. Midday meals, on the other hand, supply enough nutrients and about a third of the total calories needed to meet your nutritional demands throughout lunch. The children's attendance was extremely high, and it was directly related to their midday meals. I agree that nutrition education is necessary for growing children and their mothers. To encourage the consumption of low-cost food that is readily available and always increases the nutritious value of the meal prepared. This indicates that they are capable of effectively managing growth and development.

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